

REMARKS

The Office Action was issued on pending claims 1-9. Claims 1-9 stand rejected. In this response, claim 1 has been amended and no claims have been added or cancelled. Thus, claims 1-9 are pending in the application.

Applicants invite the Examiner to call Applicants' Representative to discuss any issues with this application.

Claim Rejections – 35 USC §103(a)

At pages 2 and 3 of the Office Action, claims 1-9 were rejected under 35 U.S.C. 103(a) as being unpatentable over GB 988659 in view of Schwendt (US 3,922,761). Applicants respectfully disagree and request withdrawal of the rejections.

Claim 1 has been amended to clarify the claim. The slide fastener with the separable bottom end stop of this application comprises a reinforcement portion formed integrally with the separable bottom end stop and extends toward at least one face of the fastener tape. The reinforcement portion comprises plural ribs. The structure and position of the ribs are particularly defined in claim 1.

Regarding the structure of the ribs, the ribs are formed such that a height H of each of the ribs is 0.5 to 0.85 mm and a width W of each of the ribs is 0.6 to 0.9 mm and that the ribs are expanded gradually from a vertex to a base portion. Fig. 5 shows an example of the rib structure. Regarding the position of the ribs, a gap portion is provided which is wider than the base portion of the rib between the adjacent ribs. Figs. 2 and 4 show an example of a gap portion 23 which is wider than the base portion 20 of the rib 13 between the adjacent ribs 13. The structure and position of the ribs of the reinforcement portion is of particular importance and not merely a matter of design choice or optimization.

A reason why Applicants' invention defines the structure and position of the ribs is to advantageously arrange the ribs on the sewing line when the fastener tape is sewn to another object. Existing devices have had problems when the fastener tape is sewn to another object. When the sewing needle makes contact with the rib at the time of sewing, the sewing needle or/and the ribs can be damaged.

However, Applicants' invention can provide advantages by addressing such problems. With the structure of the ribs as defined in amended claim 1, Applicants' invention can prevent

the sewing needle from making contact with the rib that would otherwise damage the rib or needle. That is, since the rib of amended claim 1 is formed to be expanded gradually from a vertex to a base portion, when the sewing needle contacts the rib, the rib guides the sewing needle to the direction of pricking the fastener tape while bending the sewing needle so that the sewing needle does not damage the rib. Also, because the position of the rib is defined as in amended claim 1 it is possible to prevent the sewing needle from making contact with the rib when the sewing needle pricks the fastener tape in the gap portion between the ribs.

Applicants' invention defines the gap portion to be wider than the width of the rib. The wider gap portion provides a gap in which the rib does not interrupt the movement of the sewing needle when the sewing needle pricks the fastener tape in the gap portion between the ribs. Claim 1 has the feature of the wider gap portion by defining the relative width of the gap with respect to the width of the rib.

The height and width of Applicants' rib are important features of Applicants' invention and not merely a matter of design choice, optimization or scaling. Claim 1 defines the structure of the rib such that the rib's height H is 0.5 to 0.85 mm and the rib's width W is 0.6 to 0.9 mm. There are reasons why those claimed ranges of the rib height and rib width are important features of Applicants' invention. Regarding the width of the rib, Applicants found that if the rib width is less than the lower limit of the claimed range of rib width, the contact area of the rib and the fastener tape is reduced and the attachment strength of the rib to the fastener tape is reduced. This leads to a problem that the rib can be easily separated from the fastener tape. In addition, because the rib itself would be slender the rigidity of the rib is reduced and the rib can be easily broken when the rib contacts the sewing needle. Also, if the rib width is larger than the upper limit of the claimed range of rib width, the sewing needle tends to break because the sewing needle is excessively bent when the sewing needle contacts the rib.

As to the height of the rib, Applicants found that if the rib height is less than the lower limit of the claimed range of rib height, the rib itself would be slender and the rib's rigidity is reduced. Such a rib can be easily broken when the rib contacts the sewing needle. Also, if the height is larger than the upper limit of the claimed range of rib height, the angle of the vertex becomes acute and the vertex of the rib is easily damaged when the sewing needle contacts the rib. Furthermore, the rib can be easily broken when subjected to external forces. Thus, the

claimed ranges of height and width of the rib are important features of Applicants' invention and not merely a matter of design choice, optimization or scaling.

Turning to GB '659 and Schwendt, those references do not describe or suggest all of the features of claim 1.

Claim 1 calls for "wherein the reinforcement portion comprises plural ribs having respective ribs extending from the separable bottom end stop toward an outside edge of the fastener tape, the respective ribs are provided such that they are in parallel with a gap portion between the respective ribs, and front ends of the respective ribs are connected by at least one rib to form a frame." One example of these claimed features is shown in Figs. 1 and 2. A reinforcement portion 10 has plural ribs 13 having respective ribs 13 extending from the separable bottom end stop 5 toward an outside edge of the fastener tape 3, the respective ribs 13 are provided such that they are in parallel with a gap portion 23 between the respective ribs 13, and front ends of the respective ribs 13 are connected by at least one rib 13 to form a frame 16. Claim 1 further calls for "wherein the ribs are formed in a sewing position." In other words, the respective ribs 13 extending toward the outside edge of the fastener tape 3 and the at least one rib 13 which connects the front ends of the respective ribs 13 are formed at the sewing position 40. Claim 1 further calls for "a height H of each of the ribs is 0.5 to 0.85 mm and a width W of each of the ribs is 0.6 to 0.9 mm." Thus, claim calls for all of the claimed ribs to have the structure of the claimed height and width, including both the ribs extending toward the outside edge of the fastener tape and the at least one rib which connects the front ends of the respective ribs.

Those features are further important features of Applicants' invention. All of the claimed ribs are in the sewing position and sewing lines may cross over any of the ribs depending on the particular path of the sewing lines. Because the sewing lines can cross over any of the ribs, the ribs are subject to impact by the sewing needle and the problems with the prior art and the advantages of Applicants' invention discussed above can pertain to all of the claimed ribs. Thus, it is important that all of the claimed ribs in the sewing position have the claimed structure of the height H is 0.5 to 0.85 mm and the width W is 0.6 to 0.9 mm and the ribs are expanded gradually from a vertex to a base portion and wherein the gap portion is wider than the base portion of the rib between the ribs.

Contrary to claim 1, GB '659 and Schwendt do not describe or suggest that all ribs comprising the frame have the same configuration as the ribs claimed in Applicants' claim 1. Furthermore, the claimed configuration of Applicants' ribs are important features of the invention and not merely design choice, optimization or scaling. Thus, claim 1 is allowable over GB '659 and Schwendt. Dependent claims 2-9 are allowable as least for the same reasons that claim 1 is allowable.

Therefore, the §103 rejections should be withdrawn.

CONCLUSION

For the foregoing reasons, Applicants submit that the patent application is in condition for allowance and request a Notice of Allowance be issued.

Respectfully submitted,

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